



EZLoad • EZLoad Stretch

## ***Service Manual***



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#### **Warning**

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

#### **Note**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



### **Information to the User**

This equipment must be installed and used in strict accordance with the manufacturer's instructions. However, there is no guarantee that interference to radio communications will not occur in a particular commercial installation. If this equipment does cause interference, which can be determined by turning the equipment off and on, the user is encouraged to contact Nanoptix Inc. immediately.

Nanoptix Inc. is not responsible for any radio or television interference caused by unauthorized modification of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by Nanoptix Inc. The correction of interferences caused by such unauthorized modification, substitution or attachment will be the responsibility of the user.

In order to ensure compliance with the Product Safety, FCC and CE marking requirements, you must use the power supply, power cord, and interface cable, which were shipped with this product or which meet the following parameters:

### **Power Supply**

UL Listed power supply with standard 60Hz-50Hz, 100-240VAC input and 24VDC output equipped with AC line filtering, over-current and short-circuit protection.

Use of this product with a power supply other than the Nanoptix Inc. power supply will require you to test the power supply and Nanoptix Inc. printer for FCC and CE mark certification.

### **Communication Interface Cable**

An approved Nanoptix interface cable must be used with this product. Use of a cable other than Nanoptix approved product will require that you test the cable with the Nanoptix Inc. printer and your system for FCC and CE mark certification.

### **Power Cord**

A UL listed, detachable power cord must be used. A power cord with Type SVT marking must be used. For applications outside the North America, power cords that meet the particular country's certification and application requirements should be used.

Use of a power cord other than described here may result in a violation of safety certifications that is in force in the country of use.

### **Industry Canada (IC)**

#### **Radio Frequency Interference Statement**

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

*Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.*

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## **1. About the Printer**

### **1.1 Description of Printer**

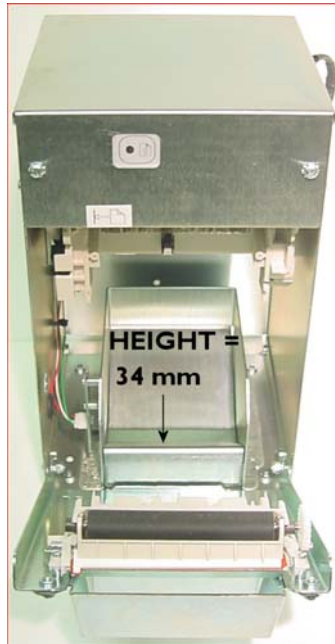
The Nanoptix EZ-Load printer is extremely fast, quiet, and very reliable. With thermal printing technology, there is no ribbon cassette to change, and paper loading is extremely simple. The printer is small enough to fit almost anywhere and is easy to use with the ticket exiting from the front.

### **1.2 EZLoad Version identification**

There are 3 versions of the EZload printer: EZload hardware rev.1, EZload hardware rev.2 and EZLoad Stretch.

#### **1.2.1 EZload hardware rev.1**

Overall height: 255 mm  
Front of paper holder: 34 mm



**Figure 1: Nanoptix EZLoad printer h/w rev. 1**



### 1.2.2 EZload hardware rev.2

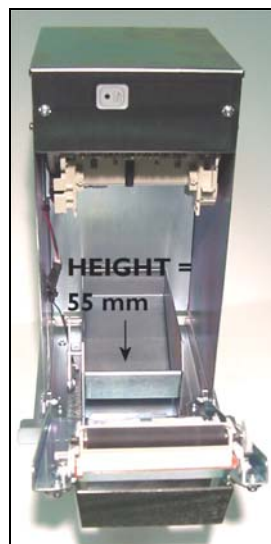
Overall height: 255 mm  
Front of paper holder: 20 mm



**Figure 2: Nanoptix EZLoad printer h/w rev. 2**

### 1.2.3 EZload Stretch

Overall height: 315 mm  
Front of paper holder: 55 mm



**Figure 3: Nanoptix EZLoad stretch printer**

### 1.3 General specifications

|                                                |                                                                                                                                                                                                                                   |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Print Method</b>                            | Direct Thermal                                                                                                                                                                                                                    |
| <b>Resolution</b>                              | 8 dot/mm (203 dpi)                                                                                                                                                                                                                |
| <b>Print Width</b>                             | 80mm                                                                                                                                                                                                                              |
| <b>Paper Width</b>                             | 80mm or 82.5 mm                                                                                                                                                                                                                   |
| <b>Max Roll Diameter</b>                       | <u>EZLoad H/W rev 1</u> : 115mm<br><u>EZLoad H/W rev 2</u> : 125 mm<br><u>EZLoad Stretch</u> : 152 mm                                                                                                                             |
| <b>Operating Temperature</b>                   | 0° to 50° C                                                                                                                                                                                                                       |
| <b>Storage Temperature</b>                     | -40° C to 65° C                                                                                                                                                                                                                   |
| <b>Operating Relative Humidity</b>             | 5% to 90% RH at 50C (non-condensing)                                                                                                                                                                                              |
| <b>Communication Interface Options</b>         | USB, optional :RS-232C, RS-485, IEEE1284                                                                                                                                                                                          |
| <b>Memory/Firmware</b>                         | PCB – non-DSP (100995-XXX): 1 Mbit SRAM, 4Mbit of flash and 128kbit of EEPROM<br>PCB – DSP (206004-XXXXX): 64 MBit SDRAM, 16 MBit flash and 1 MBit EEPROM                                                                         |
| <b>Resident Character Sets</b>                 | Support 32 fonts Approx.<br>(16 resident 16 user defined)                                                                                                                                                                         |
| <b>Integrated Bar Codes</b>                    | UPC-A, UPC-E, interleaved 2 of 5, Code 39, Code 93, Codabar, EAN 8, EAN 13, Code 128.<br>Note: Other Bar Codes can be programmed quickly                                                                                          |
| <b>Speed</b>                                   | 130 mm/s                                                                                                                                                                                                                          |
| <b>Sensors</b>                                 | <ul style="list-style-type: none"> <li>• Paper out</li> <li>• Door open</li> <li>• Cutter homed</li> <li>• Paper low</li> <li>• Jam Detect (optional)</li> </ul>                                                                  |
| <b>Human Interface</b>                         | Drop-in paper loading, status LED, paper feed button                                                                                                                                                                              |
| <b>Dimensions<br/>(width x height x depth)</b> | <u>EZLoad H/W rev 1 &amp; 2</u> : 148mm x 255mm x 155mm<br><u>EZLoad Stretch</u> : 148mm x 315mm x 170mm                                                                                                                          |
| <b>Weight</b>                                  | <u>EZLoad H/W rev 1 &amp; 2</u> : 3.5 KG<br><u>EZLoad Stretch</u> : 4.5 KG                                                                                                                                                        |
| <b>1.3.1.1 Immunity</b>                        | EN 55024: 1998 + amendment A1: 2001 + amendment A2: 2003                                                                                                                                                                          |
| <b>1.3.1.2 Emission Standards</b>              | <u>United States</u> – FCC 47 CFR Part 15, Subpart B<br><u>Canada</u> – ICES-003 Issue 4 February 2004<br><u>Europe</u> – EN 55022: 1998                                                                                          |
| <b>1.3.1.3 Safety</b>                          | <u>United States</u> – UL60950-1 first edition 2003, includes revisions through and including November 26, 2003<br><u>Canada</u> – CSA C22.2No. 60950-1-03, First edition 2003<br><u>Europe</u> – IEC 60950-1, first edition 2001 |

**Table 1: Specifications**

## 2 Printer Controls

### 2.1 Paper Loading

**Caution:** Do not operate the printer if it runs out of paper. The printer will not operate without paper, but it may continue to accept data from the host computer. Because the printer cannot print any transactions, the data may be lost.

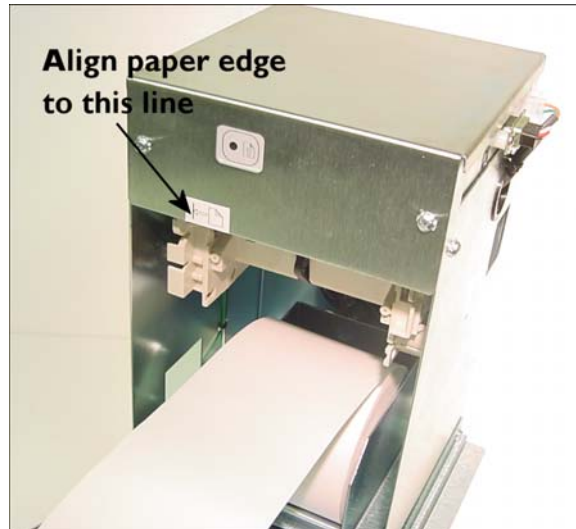
1. Open the front door.
2. Remove the used roll.
3. Tear off the end of the new roll so that the edge is loose and place the new roll into the paper bucket with a few inches of loose paper.



**Figure 4: Loading paper**

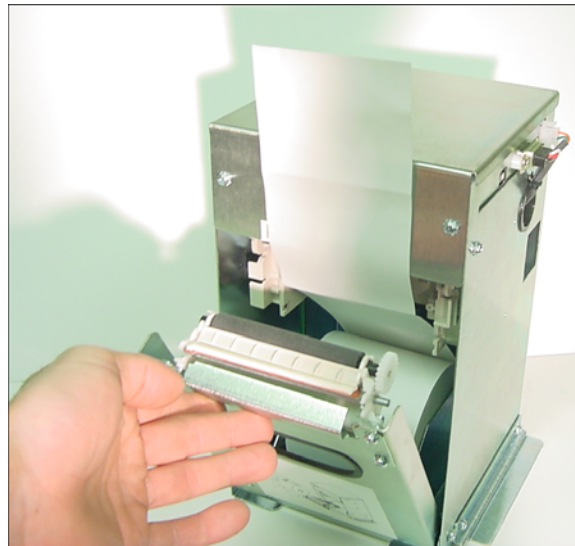
**Caution:** Ensure that the paper unrolls from the top. Otherwise, the printer will not print or the paper will jam.

4. Pull up on the top of the paper roll and align the left edge of the paper with the line on the front label.



**Figure 5: Aligning paper edge**

5. Close the door onto the paper.



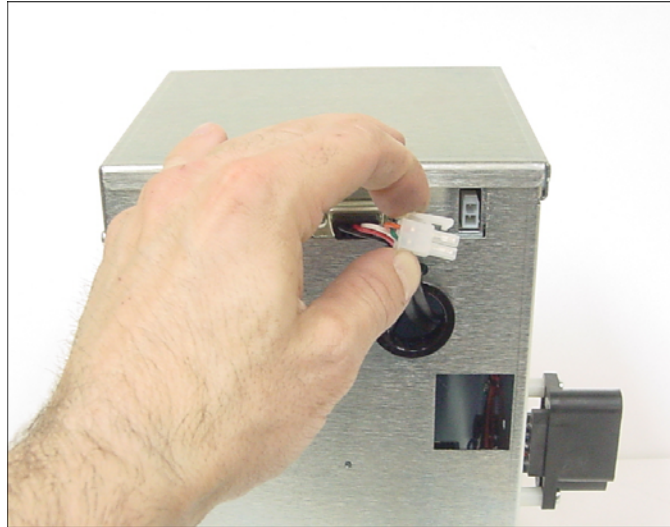
**Figure 6: Closing door**

6. Advance the paper by pressing on the paper feed button and tear off the excess paper.

**Note:** In the event of a paper jam, remove the roll, tear a new clean edge, and replace it in the paper bucket, as described above. Ensure that the paper unrolls from the top of the roll.

## 2.2 Resetting Printer

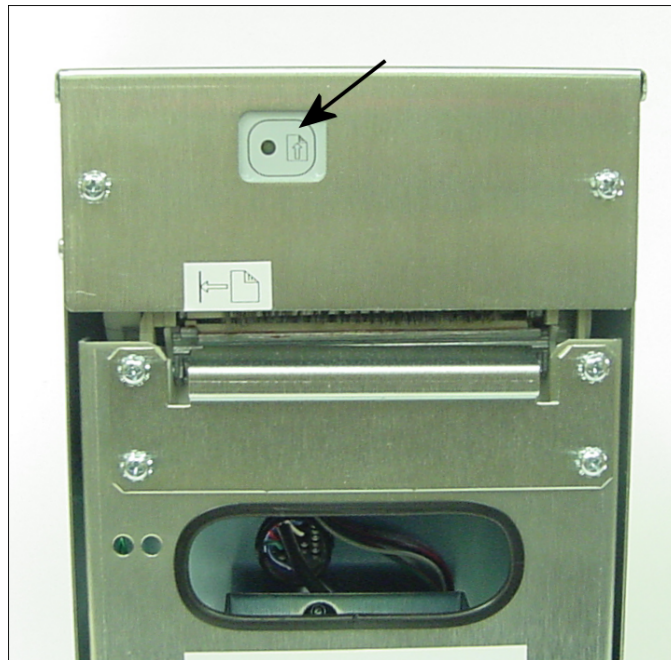
In the event of a fault condition, simply disconnect the printer's power connector to reset. Once the printer is re-connected, it will go through a startup routine and reset itself.



**Figure 7: Resetting printer**

## 2.3 Paper Feed Button

Use the Paper Feed Button to advance the paper.



**Figure 8: Paper feed button**

## 2.4 Status LED

| Condition                     | LED Status |
|-------------------------------|------------|
| Unit ready                    | ON         |
| Unit is in Reset or Booting   | OFF        |
| Unit in standby (powered off) | OFF        |
| Paper Out                     | Slow Blink |
| Door Open                     | Fast Blink |
| Paper Jam                     | Fast Blink |
| Missing Black Index Mark      | Fast Blink |
| Temperature Error             | Med Blink  |
| Voltage Error                 | Med Blink  |
| Print Head Error              | Med Blink  |

**Table 2: LED information**



**Figure 9: LED position**



## 2.5 Testing the Printer

Run this test to check the printer. The test prints and cuts a resident test ticket. Verify this ticket to judge the printing quality.

|                                       |                             |
|---------------------------------------|-----------------------------|
| Model:                                | EZLOAD                      |
| Firmware:                             | EZL-3.66J (0x75E6)          |
| Protocol:                             | Axiom A722                  |
| COMMUNICATION                         |                             |
| Interface:                            | Serial                      |
| Baud:                                 | 19200                       |
| Data Bits:                            | 8                           |
| Parity:                               | NONE                        |
| Handshaking:                          | PRT+RTS                     |
| Print Mode:                           | Line                        |
| Aux Port:                             | Disabled                    |
| PRINT CONTROL                         |                             |
| Print Method                          | No HPQ                      |
| Speed:                                | 125 mm/s                    |
| Black Bar Index:                      | Disabled                    |
| No HPQ Burn Time:                     | 425 us                      |
| Cutter PWM                            | 80%                         |
| Motor Current:                        | 2                           |
| Real Time command:                    | Enabled                     |
| Validation Bit:                       | After TOF detect            |
| PRINTER ENVIRONMENT CONDITIONS        |                             |
| Voltage:                              | 24.2 Volts                  |
| Temperature:                          | 26 Celcius                  |
| SYSTEM RESOURCES                      |                             |
| FLASH:                                | Used=00000                  |
| Free=65535                            | RAM                         |
|                                       | Used=00000                  |
|                                       | Free=65535                  |
| LIBRARY INVENTORY (STANDARD)          |                             |
| Templates:                            | 0,1,2,3,4,5,6,7,8,9,A,B,F   |
| Print Regions:                        | 1,2,3,4,5,6,7,8,9,A,B,C     |
|                                       | D,E,F,G,H,I,J,K,L,N,O,P,Q,R |
|                                       | S,T,U,Z,X,a,b,c,d,e,f,g,i   |
|                                       | J,k,l,m,n,o,p,q,r,s,t,u,v,w |
| Fonts:                                | 0,1,2,3,4,5,6,7,8,9,A,B,E,P |
| Graphics:                             |                             |
| MANUFACTURING INFORMATION             |                             |
| Printer ID:                           | 5465789                     |
| Date Code:                            | 20184                       |
| A to D:                               | DE7AA400FD000000            |
| EZL-3.66j   @   @   @   H   @   P   * |                             |

**Figure 10: Status ticket**

To print the test ticket, power-on the printer while pressing and holding the Paper Feed Button for approximately 3 seconds. A test ticket similar to above will be printed approximately 5 seconds after. Press the paper feed button once more and the ticket will feed. Pressing the button again will result in blank tickets.



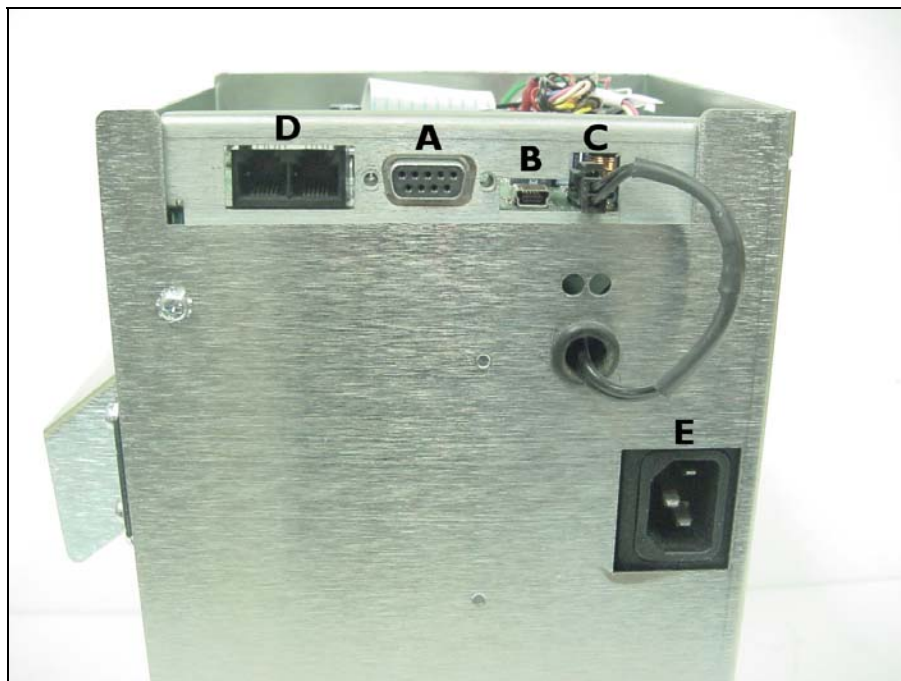
## 3 Troubleshooting the Printer

### 3.1 Printer Interface Ports

#### 3.1.1 PCB – non-DSP (100995-XXX)

| Port Identification | Connector Type                  | Function                                                  |
|---------------------|---------------------------------|-----------------------------------------------------------|
| A                   | DB9 receptacle                  | RS-232 communication (optional daughter PCB)              |
| B                   | USB type mini B                 | USB communication                                         |
| C                   | Molex 2 pin latching            | 24 VDC                                                    |
| D                   | RJ25 modular jack               | RS485 communication (optional)                            |
| E                   | IEC-603220                      | Line supply (100-240 VAC, optional)                       |
| N/A                 | Micro Ribbon "Centronix" 36 pin | IEEE 1294 (parallel communication, optional daughter PCB) |

**Table 3: Interface ports (non-DSP)**

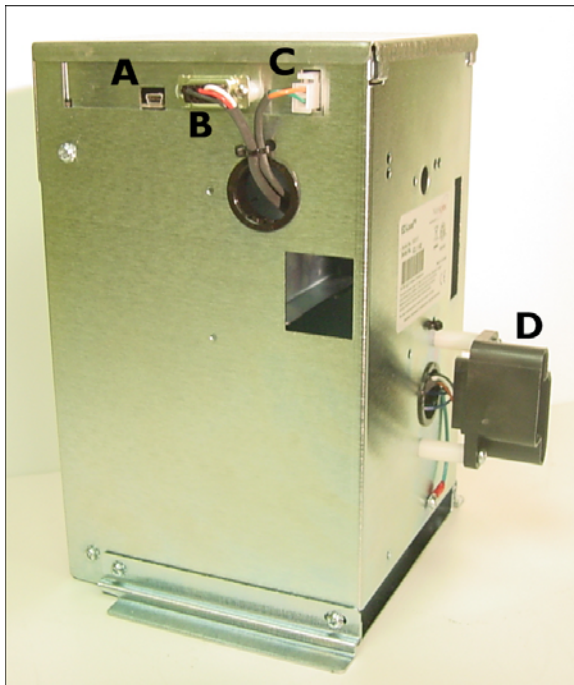


**Figure 11: Interface ports (non-DSP)**

## 3.1.2 PCB – DSP (206004-XXXXX)

| Port Identification | Connector Type        | Function                            |
|---------------------|-----------------------|-------------------------------------|
| A                   | DB9 receptacle        | RS-232 communication                |
| B                   | USB type mini B       | USB communication                   |
| C                   | Molex 2 in latching   | 24 VDC                              |
| D                   | Metri Mate            | 24 VDC & communication (optional)   |
| E                   | Molex 14 pin latching | 24 VDC & communication (optional)   |
| N/A                 | IEC-603220            | Line supply (100-240 VAC, optional) |

**Table 4: Interface ports (DSP)**



**Figure 12: Interface ports (DSP)**

## 3.2 Pin designation of Communication Interfaces

### 3.2.1 RS-232 (DB-9)

| Pin   | Signal Name                 | Printer I/O                               | Host I/O      | Printer Function                                       |
|-------|-----------------------------|-------------------------------------------|---------------|--------------------------------------------------------|
| 1     | n/a                         | always driven low<br>(high on RS232 side) | Input         | None                                                   |
| 2     | PRT_RS232_TXD               | Output                                    | Input         | Data transmit                                          |
| 3     | PRT_RS232_RXD               | Input                                     | Output        | Data receive                                           |
| 4     | n/a                         | No connect                                | Output        | None                                                   |
| 5     | Signal Ground               | Signal Ground                             | Signal Ground | Signal Ground                                          |
| 6     | RS232_DSR                   | Output                                    | Input         | Printer Ready<br>(Connected to<br>PRT_RS232_RTS Pin 8) |
| 7     | PRT_RS232_CTS<br>(host RTS) | Input                                     | Output        | Handshake                                              |
| 8     | PRT_RS232_RTS<br>(host CTS) | Output                                    | Input         | Handshake                                              |
| 9     | n/a                         | always driven high<br>(low on RS232 side) | Input         | None                                                   |
| Shell | Frame Ground                | Frame Ground                              | Frame Ground  | Shield                                                 |

**Table 5: 9 Pin RS232 serial interface**

### 3.2.2 Metri Mate (25 pin)

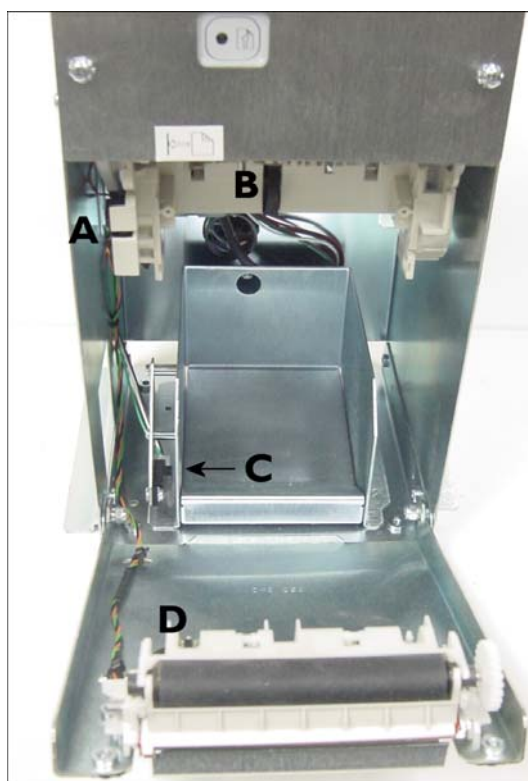
| Pin   | Signal Name    | Printer I/O    | Host I/O       | Printer Function |
|-------|----------------|----------------|----------------|------------------|
| 1-7   | NC             | NC             | NC             | NC               |
| 8     | Frame Ground   | Frame Ground   | Frame Ground   | Frame Ground     |
| 9     | PRT_RS232_RXD  | Input          | Output         | Data receive     |
| 10    | RS232_DSR      | NC             | Loop to DTR    |                  |
| 11    | NC             | NC             | NC             | NC               |
| 12    | 24 VDC         | 24 VDC         | 24 VDC         | Power 24VDC      |
| 13    | Digital Ground | Digital Ground | Digital Ground | Digital Ground   |
| 14    | Signal Ground  | Signal Ground  | Signal Ground  | Signal Ground    |
| 15-16 | NC             | NC             | NC             | NC               |
| 17    | PRT_RS232_TXD  | Output         | Input          | Data transmit    |
| 18    | RS232_DTR      | NC             | Loop to DSR    |                  |
| 19-25 | NC             | NC             | NC             | NC               |

**Table 6: 25 Pin Metri mate interface**

### 3.3 Sensors and switches

| Sensor / Switch | Function                            |
|-----------------|-------------------------------------|
| A               | Door Closed                         |
| B               | Paper Out                           |
| C               | Paper Low                           |
| D               | Top Of Form (index mark) (optional) |
| N/A             | Jam Detect (optional)               |

**Table 7: Sensors & switches**



**Figure 13: Sensors & switches**

### 3.4 Printing Problems

The table below can be used to determine the cause and resolution of the most common problems that may occur. If the information in this section does not correct the problem, contact your authorized service representative.

| Problem                                                                | Possible Causes                                                | What to Do                                                                    |
|------------------------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------------------------------|
| Receipt does not come out all the way.                                 | Paper is jammed.                                               | Open the receipt cover, inspect the cutter blade, and clear any jammed paper. |
| Printer starts to print, but stops while the receipt is being printed. | Paper is jammed.                                               | Open the receipt cover, inspect the cutter blade, and clear any jammed paper. |
| Receipt is not cut.                                                    | Paper is jammed.                                               | Open the receipt cover, inspect the cutter blade, and clear any jammed paper. |
|                                                                        | The printer is not configured for a knife.                     | Contact your authorized service representative.                               |
| Print is light or spotty.                                              | Paper roll loaded incorrectly.                                 | Check that the paper is loaded properly.                                      |
|                                                                        | Thermal print head is dirty.                                   | Use recommended thermal receipt paper.                                        |
| Vertical column of print is missing.                                   | This indicates a serious problem with the printer electronics. | Contact your authorized service representative.                               |
| One side of receipt is missing.                                        | This indicates a serious problem with the printer electronics. | Contact your authorized service representative.                               |

**Table 8: Troubleshooting printing problems**

### 3.5 Printer Does Not Work

| Problem                                   | Possible Causes         | What to Do                                                             |
|-------------------------------------------|-------------------------|------------------------------------------------------------------------|
| Printer Does Not Function When Turned On. | Printer not plugged in. | Check that printer cables are properly connected on both ends.         |
|                                           |                         | Check that the host or power supply is switched on. Check Printer LED. |
|                                           | Door not fully closed.  | Close the door.                                                        |

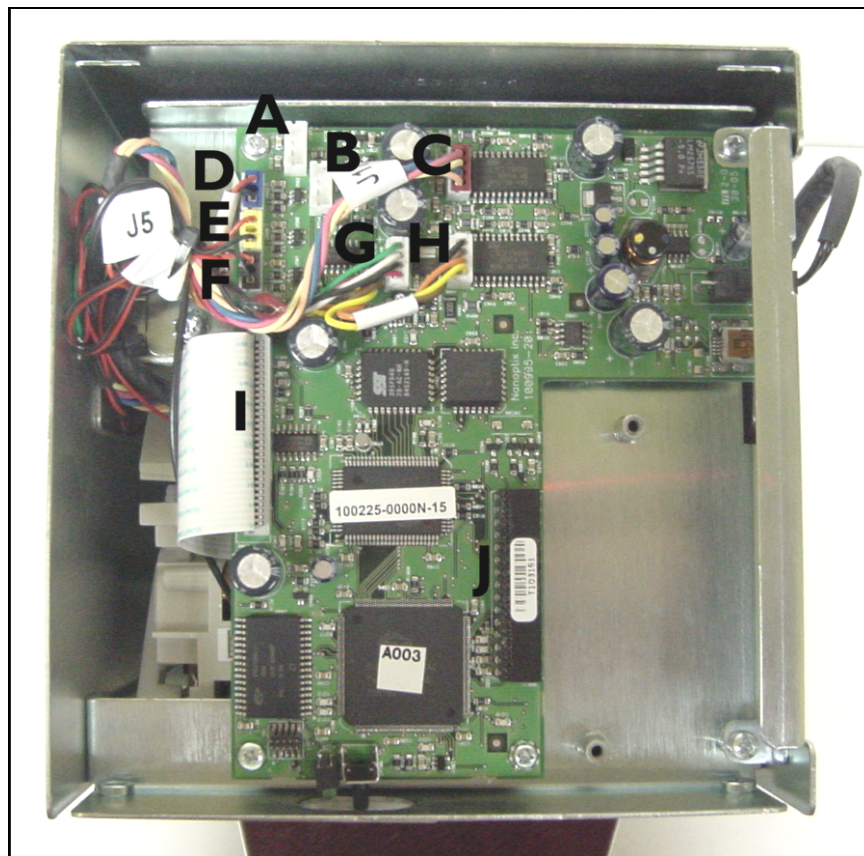
**Table 4: Printer does not work**

### 3.6 Connector Layout, Main Controller PCB

#### 3.6.1 PCB – non-DSP (100995-XXX)

| Letter | Cable designation | Connector Color | PCB designation | Function       |
|--------|-------------------|-----------------|-----------------|----------------|
| A      | none              | N/A             | J101            | Jam detect     |
| B      | none              | N/A             | J700            | top of form    |
| C      | J17               | red             | J401            | cutter motor   |
| D      | J6                | blue            | J502            | cover open     |
| E      | J7                | yellow          | J500            | Paper out      |
| F      | J5                | black           | J501            | cut complete   |
| G      | none              | white           | J600            | paper low      |
| H      | J15               | white           | J400            | feeder motor   |
| I      | none              | N/A             | J300            | print head I/O |
| J      | none              | N/A             | J1000           | expansion port |

**Table 9: PCB connectors (non-DSP)**



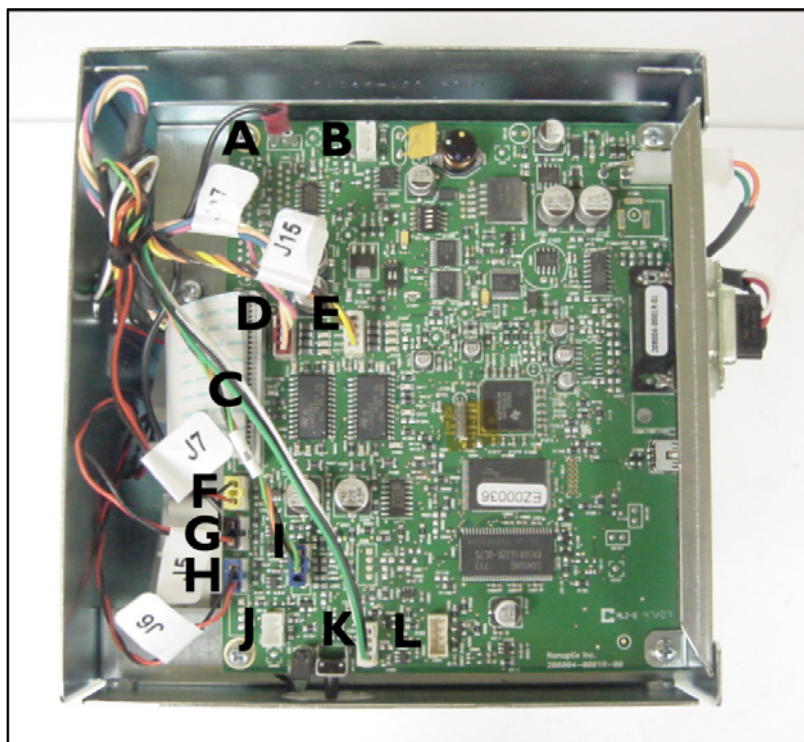
**Figure 14: Connector layout (non-DSP)**



### 3.6.2 PCB – DSP (206004-XXXXX)

| Letter | Cable designation | Connector Color | PCB designation | Function       |
|--------|-------------------|-----------------|-----------------|----------------|
| A      | none              | Metal           | J301            | TPH-ground     |
| B      | none              | N/A             | J200            | LED Bezel      |
| C      | none              | N/A             | J300            | Print head I/O |
| D      | J17               | Red             | J401            | Cutter Motor   |
| E      | J15               | White           | J400            | Feeder Motor   |
| F      | J7                | Yellow          | J602            | Paper Out      |
| G      | J5                | Black           | J402            | Cutter homed   |
| H      | J6                | Blue            | J601            | Door open      |
| I      | none              | Blue            | J600            | Top of Form    |
| J      | none              | N/A             | J102            | Buzzer         |
| K      | none              | white           | J501            | Paper Low      |
| L      | none              | N/A             | J502            | Paper In       |

**Table 10: PCB connectors (DSP)**



**Figure 15: Connector layout (DSP)**

## 4 Media and Supplies Guide

### 4.1 Thermal Paper Specifications

The printer requires qualified thermal paper with the following dimensions:

#### 4.1.1 EZload H/W rev.1

| Width                                         | Diameter              | Outside Core Diameter |
|-----------------------------------------------|-----------------------|-----------------------|
| 80 mm $\pm$ .2 mm (3.15 in. $\pm$ .008 in.)   | 115 mm max. (4.5 in.) | 45mm (1.75 inches)    |
| 82.5 mm $\pm$ .2 mm (3.25 in. $\pm$ .008 in.) | 115 mm max. (4.5 in.) | 45mm (1.75 inches)    |

**Table 11: Paper specs EZLoad rev1**

#### 4.1.2 EZload H/W rev.2

| Width                                         | Diameter            | Outside Core Diameter |
|-----------------------------------------------|---------------------|-----------------------|
| 80 mm $\pm$ .2 mm (3.15 in. $\pm$ .008 in.)   | 125 mm max. (5 in.) | 45mm (1.75 inches)    |
| 82.5 mm $\pm$ .2 mm (3.25 in. $\pm$ .008 in.) | 125 mm max. (5 in.) | 45mm (1.75 inches)    |

**Table 12: Paper specs EZLoad rev2**

#### 4.1.3 EZload Stretch

| Width                                         | Diameter            | Outside Core Diameter |
|-----------------------------------------------|---------------------|-----------------------|
| 80 mm $\pm$ .2 mm (3.15 in. $\pm$ .008 in.)   | 152 mm max. (6 in.) | 45mm (1.75 inches)    |
| 82.5 mm $\pm$ .2 mm (3.25 in. $\pm$ .008 in.) | 152 mm max. (6 in.) | 45mm (1.75 inches)    |

**Table 13: Paper specs EZLoad stretch**

The paper should not be attached to the core. If Top of Form Option is installed, paper with a colored stripe at the end can be used to indicate that the paper is running low.



## 4.2 Ordering Thermal Paper

We recommend the following paper grades produced by their respective manufacturers. There are a number of paper converters qualified to supply this paper, provided the thermal paper rolls are from these recommended grades.

| Manufacturer                                | Paper Grade                           | Paper Thickness  |
|---------------------------------------------|---------------------------------------|------------------|
| <b>Kanzaki Specialty Papers (USA)</b>       | Lotto 480                             | 83 g/m2 – 3.3mil |
| <b>Kanzan Spezialpapiere GMBH (Germany)</b> | KLS 36                                | 79g/m2 – 3.1mil  |
|                                             | KLS 46                                | 81g/m2 – 3.2mil  |
| <b>Appleton Papers, Inc. (USA)</b>          | Optima T-886 B (now Heatsafe 200-3.2) | 82g/m2 – 3.2mil  |
| <b>Blumberg GMBH</b>                        | T49-32                                | 88 g/m2 – 3.5mil |
| <b>Mitsubishi</b>                           | TP8065                                | 80g/m2 – 3.1mil  |

**Table 5: Ordering thermal paper**

Additional grades can be qualified and made available. Contact your sales representative for more information.

## 5 Parts

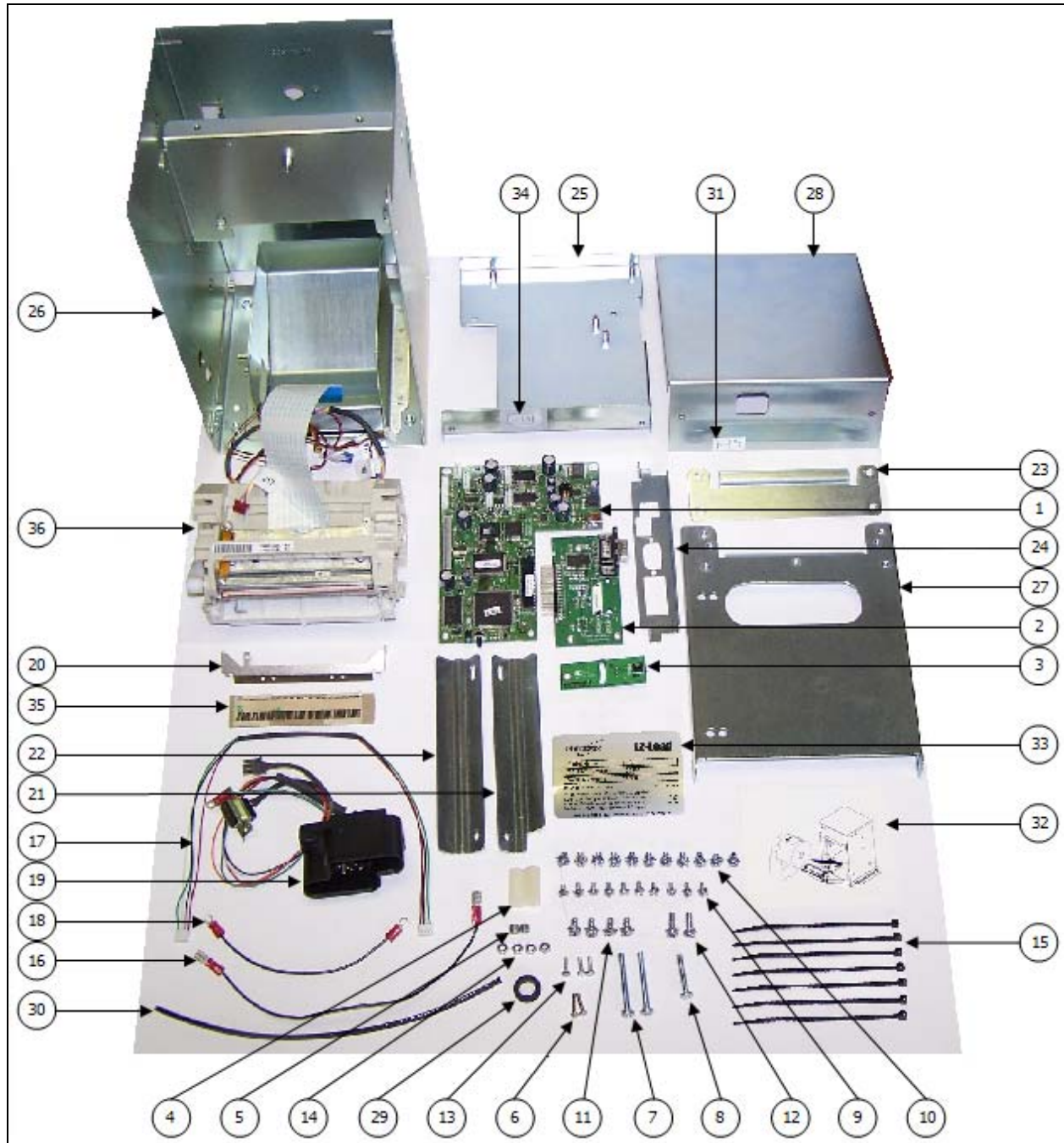


Figure 16: Parts



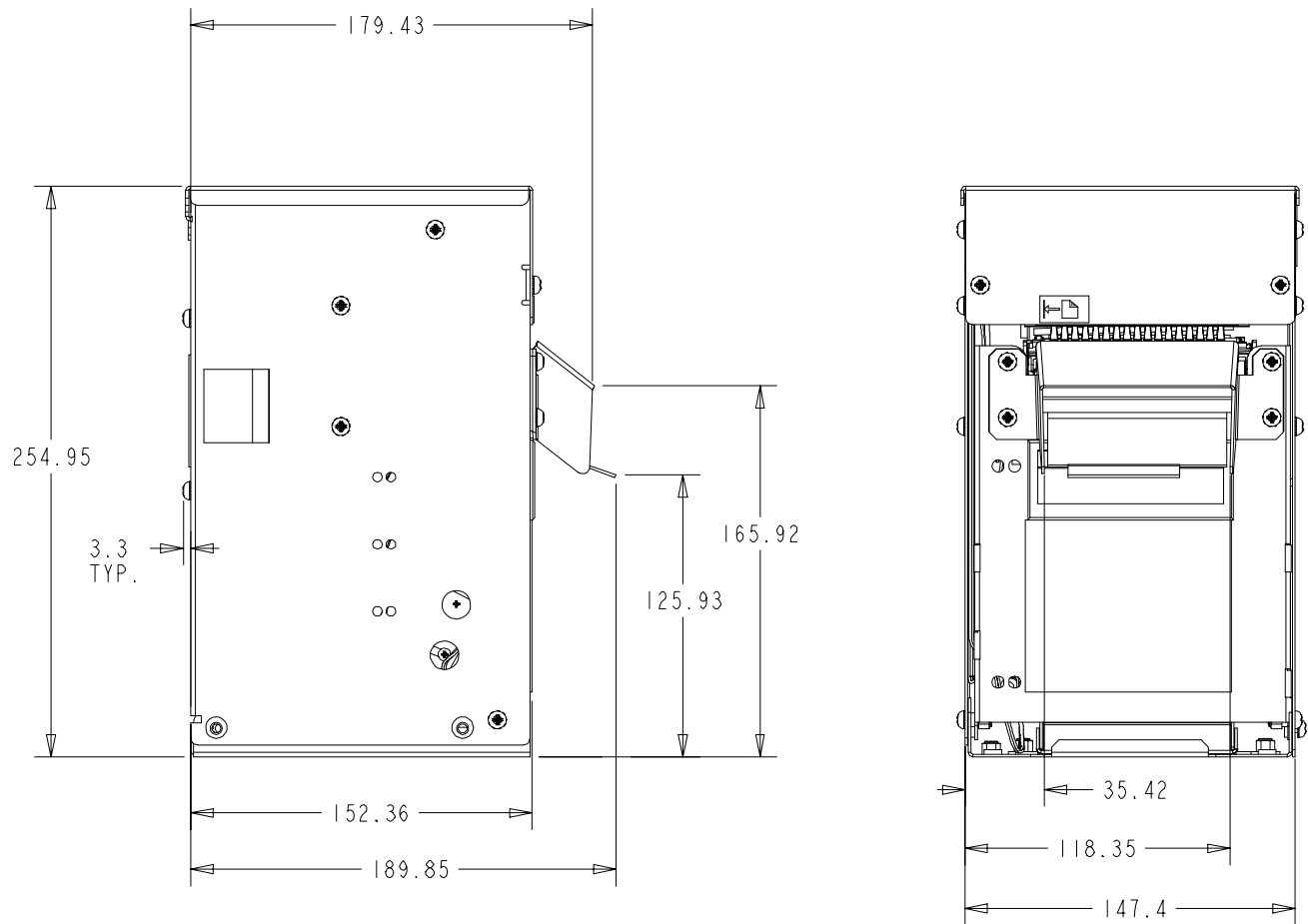
## EZ LOAD PRINTER Service Manual

| REFERENCE                        | PART NUMBER | DESCRIPTION                         | QUANTITY |
|----------------------------------|-------------|-------------------------------------|----------|
| <b>BOARD ASSEMBLY PACKAGES</b>   |             |                                     |          |
| 1                                | 100225-0000 | BAP, MAIN BOARD, EZL (EZUSB MICRO)  | 1        |
| 2                                | 100548-0000 | BAP, SERIAL INTERFACE, RS232, EZL   | 1        |
| 3                                | 102173-0000 | PAPER LOW BOARD, SHARP SENSOR       | 1        |
| <b>HARDWARE</b>                  |             |                                     |          |
| 4                                | 100029-0241 | SPACER, NYLON, #8, 3/8OD, 7/8L      | 2        |
| 5                                | 100029-2101 | 4.42ID, 6.35OD, 6.5mm LONG          | 2        |
| 6                                | 100041-0166 | SCREWS, M3X12, 0.5, CROSS, ZINC     | 2        |
| 7                                | 100041-0250 | SCREW, MACHINE, M4X35, PAN HEAD     | 2        |
| 8                                | 100041-0927 | SCREWS, #8, 1", CROSS, ZINC         | 1        |
| 9                                | 100041-1164 | SCREWS, M3X6, 0.5, CROSS, ZINC      | 10       |
| 10                               | 100041-1243 | SCREWS, M4X6, 0.7, CROSS, ZINC      | 11       |
| 11                               | 100041-1244 | SCREWS, M4X8, 0.7, CROSS, ZINC      | 4        |
| 12                               | 100041-1246 | SCREWS, M4X12, 0.7, CROSS, ZINC     | 2        |
| 13                               | 100041-1605 | SCREWS, M3X10, 0.5, SLOT, SS        | 3        |
| 14                               | 100050-0105 | NUT, M4X7, T0.7, H5.0               | 4        |
| 15                               | 100068-0001 | TIE WRAP, BLACK, 4", NYLON          | 7        |
| <b>HARNESS ASSEMBLY PACKAGES</b> |             |                                     |          |
| 16                               | 102057-0000 | ESD TEAR BAR HARNESS                | 1        |
| 17                               | 102070-0000 | MOTOR HARNESS                       | 1        |
| 18                               | 102675-0000 | THERMAL MECH GROUNDING HARNESS      | 1        |
| 19                               | 210016-0001 | HAP, DB9P, 2 MICROFIT, 25 METRIMATE | 1        |
| <b>METAL</b>                     |             |                                     |          |
| 20                               | 100039-0000 | TEARBAR                             | 1        |
| 21                               | 100510-0000 | BRACKET, RIGHT                      | 1        |
| 22                               | 100511-0000 | BRACKET, LEFT                       | 1        |
| 23                               | 100672-0000 | BRACKET, PAPER OUT                  | 1        |
| 24                               | 101059-0002 | CONNECTOR PLATE, SERIAL             | 1        |
| 25                               | 102308-0000 | PCB BRACKET                         | 1        |
| 26                               | 102310-0000 | FRAME, MAIN                         | 1        |
| 27                               | 102312-0000 | DOOR                                | 1        |
| 28                               | 102319-0000 | TOP COVER                           | 1        |

**Table 14: parts**

Note: parts may vary depending on configuration. Contact Nanoptix for your specific parts list.

## 6 Mechanical Drawings



**Figure 17: EZLoad H/W rev 1 & 2 (in mm)**

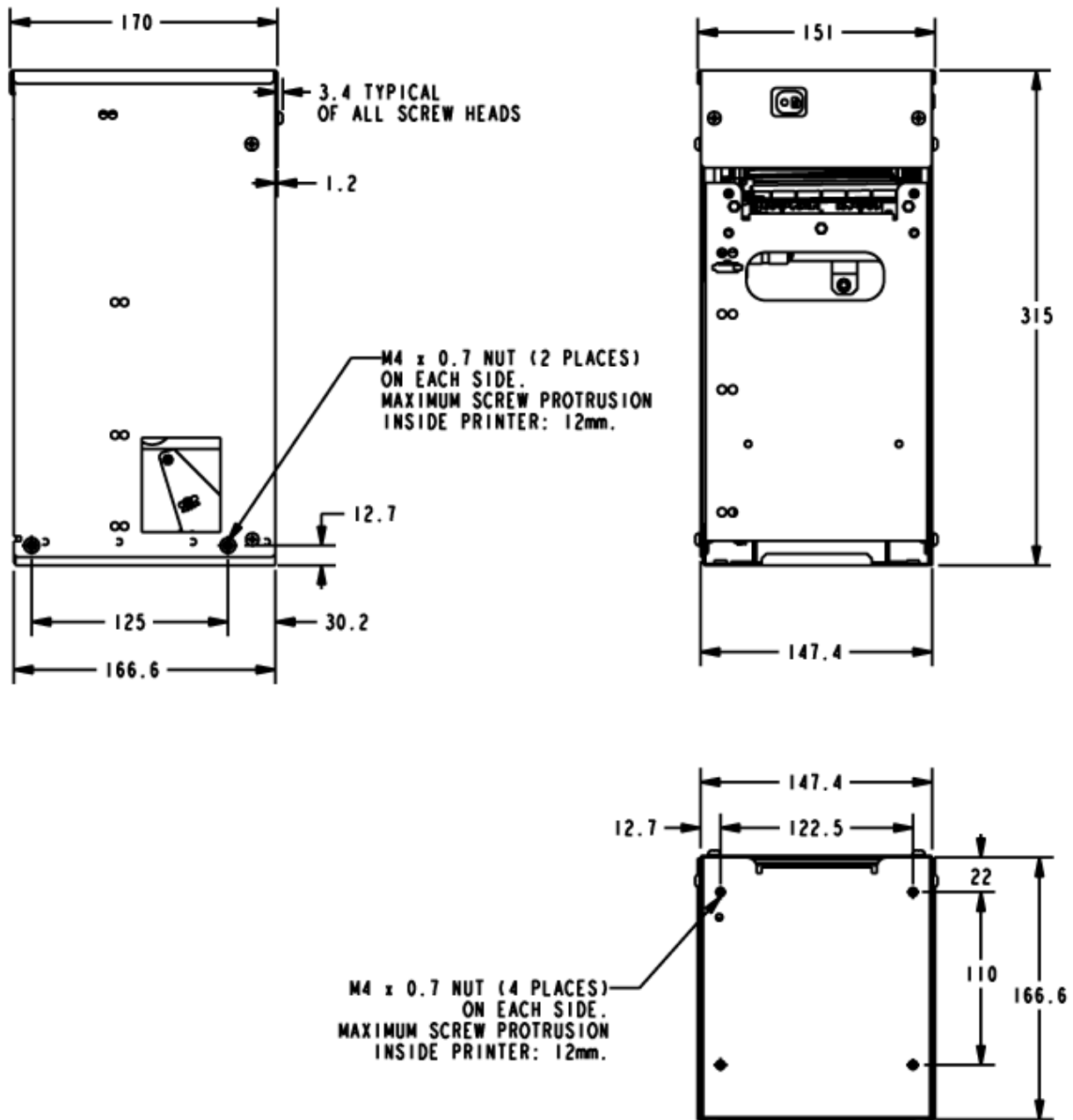


Figure 18: EZLoad Stretch (in mm)

## Spare parts replacement instructions

Note: Follow instructions below for disassembly of defective parts. Follow instructions in the reverse order for reassembly.



Use ESD protection (such as a wrist strap) anytime a PCB is exposed



### Tool required:

| REFERENCE | DESCRIPTION             |
|-----------|-------------------------|
| TOOL 1    | SCREWDRIVER, SLOTTED #6 |
| TOOL 2    | SCREWDRIVER, PHILIPS #2 |
| TOOL 3    | WRENCH, 7mm             |

**Table 15: tools required**

### 6.1 Instruction A: Removal of the top cover

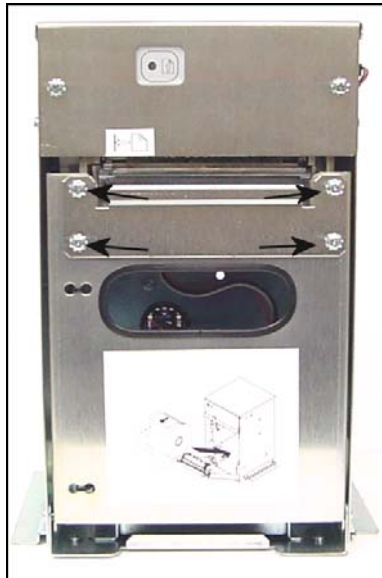
1. Remove two (2) screws as shown in Figure 19 using tool 2



**Figure 19: Top cover**

## 6.2 Instruction B: Removal of the bezel (optional item)

1. Remove four (4) screws as shown in Figure 20 using tool 2



**Figure 20: bezel**

## 6.3 Instruction C: Removal of the rails (optional item)

1. Remove four (4) screws, 2 on right side as shown in Figure 21 and 2 on left side using tool 2



**Figure 21: rails**



## 6.4 Instruction D: Removal of the main PCB

1. Disconnect all connectors
2. Remove four (4) screws as shown in Figure 22 using tool 2

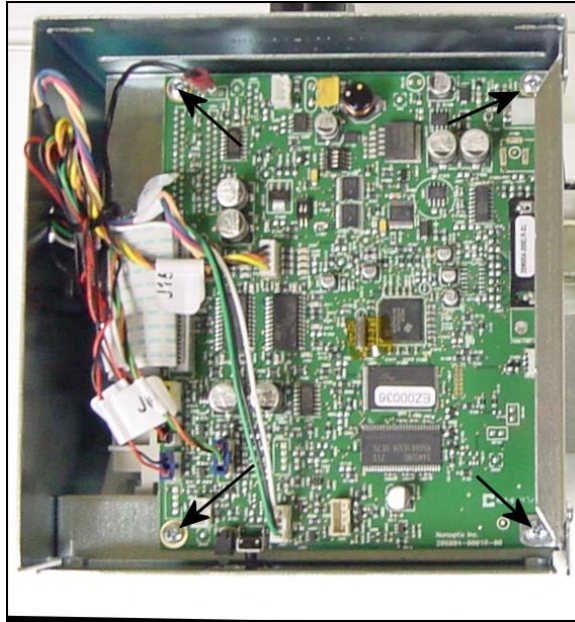


Figure 22: Main PCB

## 6.5 Instruction E: Removal of PCB mounting plate

1. Remove four (4) screws as shown in Figure 23 using tool 2

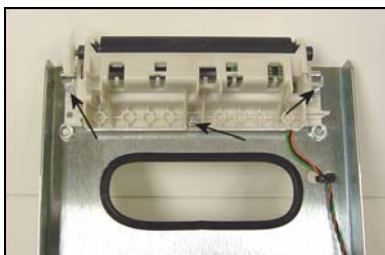


Figure 23: PCB mounting plate



## 6.6 Instruction F: Removal of printing mechanism

1. Remove top cover by following instruction A
2. Disconnect all printing mechanism harnesses
3. Open door and remove three (3) screws which are holding roller part of mechanism, as shown in Figure 24 using tool 1



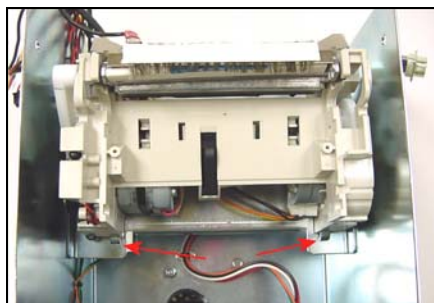
**Figure 24: Printing mechanism 1**

4. Remove screw which is holding main part of mechanism, as shown in Figure 25 using tool 2



**Figure 25: Printing mechanism 2**

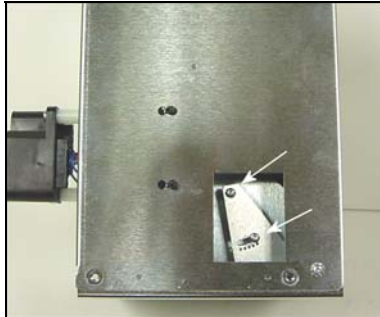
5. Lift up, releasing mechanism from the two (2) lances as shown in Figure 26



**Figure 26: Printing mechanism 3**

## 6.7 Instruction G: Removal of the paper low sensor

1. Remove top cover by following instruction A
2. Disconnect paper low harnesses
3. Remove two (2) screws as shown in Figure 27 using tool 2



**Figure 27: paper low sensor 1**

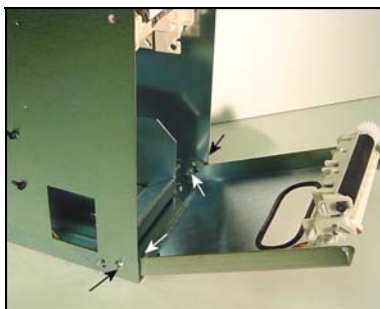
1. Separate sensor from sensor plate by remove screws as shown in Figure 28 using tool 2



**Figure 28: paper low sensor 2**

## 6.8 Instruction H: Removal of the door

1. While holding nut with tool 3, remove screw with tool 2 (x2)



**Figure 29: Door**

## 6.9 Instruction I: Removal of MetriMate I/O harness (optional item)

1. disconnect power and remove db9 connector
2. While holding nut tool 3, remove screw using tool 2
3. remove grounding harness by removing screw using tool 2



**Figure 30: MetriMate harness**

## 6.10 Instruction J: Removal of power supply (optional item)

1. Follow Instruction A, D & E
2. Remove two (2) screws as shown in Figure 31 using tool 2

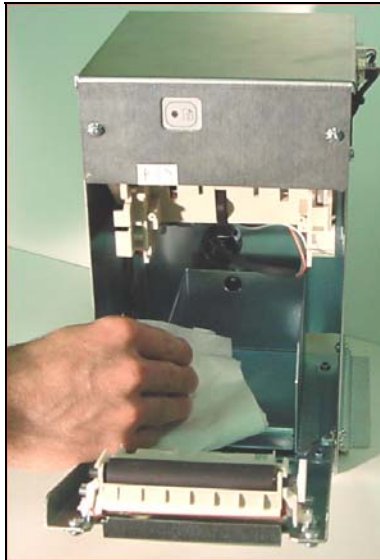


**Figure 31: Power supply**

## 7 Printer Cleaning Instructions

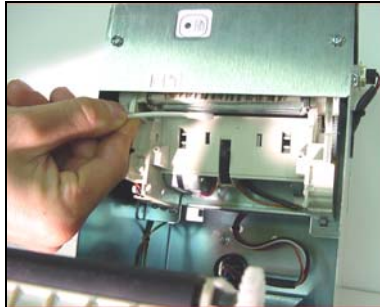
Note: Under normal operating conditions, the minimum interval for cleaning the Nanoptix EZLoad printer is *3 months* or *5 km* of paper printed, whichever comes first. Isopropyl alcohol cleaning pens and pre-saturated cleaning cards are available from Nanoptix.

### 7.1 Open printer door and wipe off or vacuum the accumulated dust



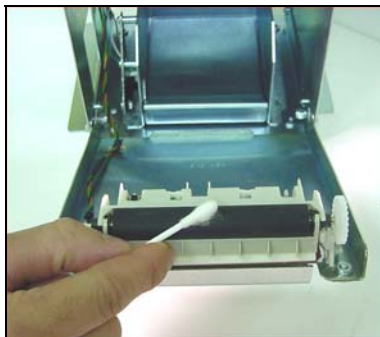
**Figure 32: Remove dust**

**7.2 Clean the print line (black line on the print head) with a cotton swab and isopropyl alcohol.**



**Figure 33: Clean print head**

**7.3 Clean roller with a cotton swab and isopropyl alcohol**



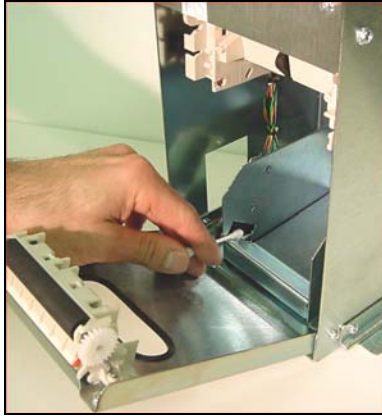
**Figure 34: Clean roller**

**7.4 Clear dust off static brushes using a vacuum or light brush**



**Figure 35: Clean brushes**

## 7.5 Clean paper low sensor with a cotton swab and isopropyl alcohol



**Figure 36: Clean paper low sensor**

## 7.6 Clean optional top of from sensor with a cotton swab and isopropyl alcohol if in use



**Figure 37: Clean TOF sensor**

## **8 Service & Support**

### **8.1 Returning printers back to Nanoptix for repairs (RMA)**

- Send repair approval request to Nanoptix Inc. which should include:
  - Printer model #
  - Serial #
  - Brief problem description
- Ship defective products to Nanoptix Inc.
- Ensure that each package being sent is identified by the specified RMA number

NOTE: Make sure to place a blank ticket or a piece of paper between thermal print head and roller for shipping and storage.

#### **United States of America**

RMA # XXXXXX  
Nanoptix Inc.  
C/o Brunswick Brokers  
48 Customs Loop  
Houlton, ME, USA  
04730

#### **Canada and International**

RMA # XXXXXX  
Nanoptix Inc.  
699 Champlain St.  
Dieppe, NB, Canada  
E1A 1P6

NOTE: It is imperative that every package clearly identified by an RMA number.

### **8.2 Technical Support Contact Information**

Service Dept.  
Nanoptix Inc.  
699 Champlain St.  
Dieppe, NB, Canada  
E1A 1P6  
Tel: 506.384.3388 x213  
Fax: 506.384.3588  
E-mail: [support@nanoptix.com](mailto:support@nanoptix.com)  
Web site: [www.nanoptix.com](http://www.nanoptix.com)